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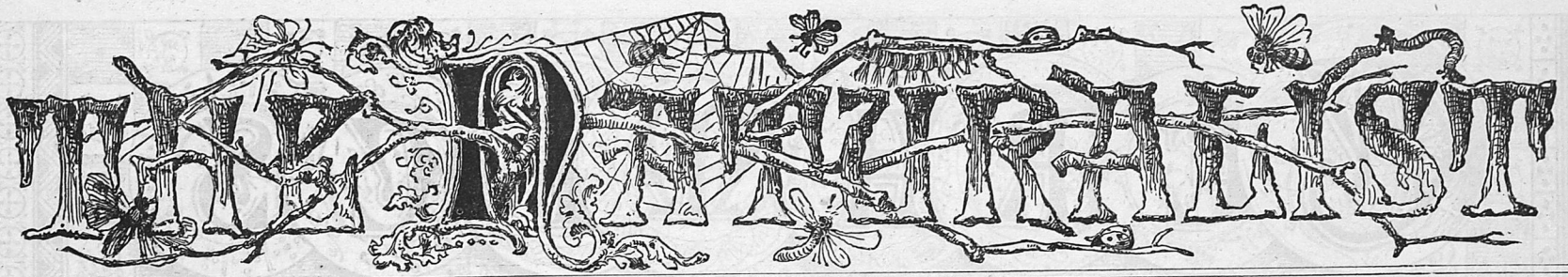
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PRINTING BUTTERFLIES' WINGS.



I. DUBTLESS, among the many beautiful objects in nature, none is more lovely than a butterfly. But the naturalist, who desires to form a collection of these "floating flowers," knows only too well, or will soon learn by experience, how troublesome a task awaits him. A butterfly, or a moth, however large, cannot be skinned like a bird and have the skin packed away until required. Nor can it be bottled in spirit like a snake or scorpion, corked down, and thus at once prepared for its place in the collection. Neither can a butterfly or moth be pressed between the leaves of a book like a flower or a fern, and by this means be kept until a convenient season in which it may be spread out and properly arranged.

No: the butterfly must be "set up" as soon after its death as possible, or it becomes fixed in an undesirable form; it must have space also around it, and not be pressed upon, even by another butterfly, or it runs a risk of being broken, or of having the scales rubbed off. Then, when properly "set up" in its own place, and in its own box or drawer, the latter must either be hermetically sealed round every chink, to prevent the possibility of other insects finding ingress, or a constant watch must be kept up lest some of the minute creatures, which are ever on the look-out for such an opportunity, should breed among the bodies and destroy the collection.

In the processes recently perfected for printing the wings of butterflies and moths, all these disadvantages are obviated. The collector may form his collection and carry it about in as small a space as would be occupied by drawings of the same objects, while the accuracy of every line and mark, the delicacy of the shading, the brilliancy of the hues, and the metallic sheen which appears on the wings of many of the tribe, is at the same time reproduced, and preserved to a degree which is impossible in even the most carefully drawn and highly finished painting; and the time and labor required are as much less as the result is greater.

The idea of printing butterflies' wings is by no means new. The French missionaries in India had a recipe, many years ago, for "transferring" the wings of butterflies. In substance it was as follows:

"Smear a piece of paper with a mixture formed of honey, gum-arabic, and a little salt. Place the wings of a butterfly upon the paper, and press another smeared paper very firmly down upon them."

The directions for the mixture were, however, too vague to admit of a good result being attained with certainty. The gum process is upon the whole the most simple of the improved modern processes, and also, as a general rule, the most certain in its results. It should be noted that the green and blue butterflies require a different treatment altogether, and it is useless to attempt printing them by any of the methods employed upon red, orange, yellow, brown, white, or black butterflies and moths. The materials required for the gum process are:

Gum arabic, the very best and clearest which can be had.

White paper, which should be unglazed, smooth and fine in texture, and at the same time very tough, though any good paper will do.

A "dub," made of wash-leather or linen filled with cotton-wool. The dub should be quite firm, but not too hard, and enough of the leather or linen should be left to form a good handle.

Scissors, with sharp, strong points.

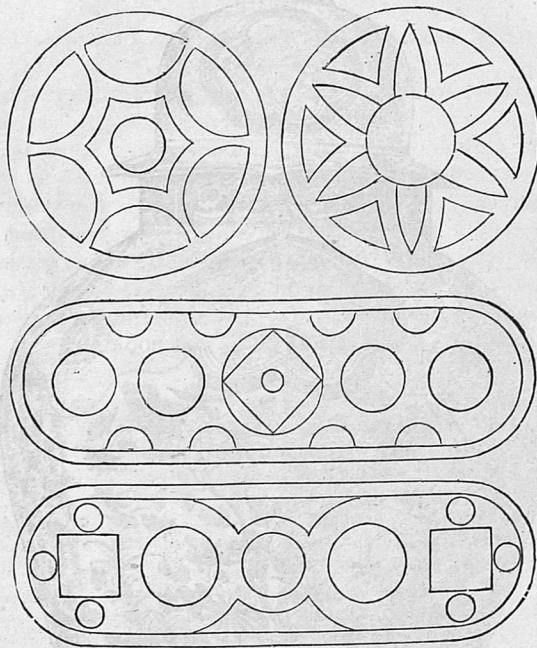
A piece of strong, smooth card-board.

A "rubber," for which almost any thing may be used. A ball of glass or crystal, large enough to be

held comfortably in the hand, is the best, as being perfectly smooth; but the handle of an ivory paper-knife, or brush, or even the bowl of a silver spoon, will answer the purpose on emergency.

Having procured these materials, dissolve some of the gum to a consistency thicker than is required for ordinary use, but still quite liquid, and take particular care to have no grit or dirt of any kind in it. Place a half-sheet of paper on the card-board. Half a sheet is better than a whole one, and for beginners a quarter of a sheet would be better still, as enabling the printer to spread the gum with greater evenness over the whole surface. Fold the paper in half, and press it at the fold. Then open it out and pour a few drops of gum on the middle of it. Then with the finger rub the gum well into the paper all over its surface. The gum must be rubbed in until the finger will hardly travel over the paper. This will take a minute or two if the gum is of the proper consistency, but trouble must not be spared, for upon the right preparation of the paper depends the success of the impression.

Before preparing the paper the wings should have been cut off the bodies of the butterflies or moths with a pair of sharp, strong-pointed scissors. They should be cut at the joint, which is easily found, and handled



DESIGNS FOR CARPET GARDENING.

lightly to avoid rubbing off the scales. Now lay, on the prepared paper, on one side of the fold only, as many wings as can be arranged without touching one another. Fold the blank side down upon them, and with the dub press each wing, and dub the whole surface until the paper is everywhere stuck together.

Lift the paper off the card-board with a paper-knife, and place it on a smooth and steady table (marble is the best), and proceed to rub it hard with whatever is being used as a rubber. It is better to place a piece of dry paper over the impression while rubbing, as it absorbs the moisture and prevents the risk of rubbing the paper into holes, which sometimes occurs (if the wings of the butterfly or moth are large, with strong bony ridges) through the damp of the gum softening the paper. The rubbing should be continued on both sides until the paper presents a glazed surface, with no lines or stripes upon it. Then, by beginning at one corner, a strong, slow, steady pull will bring the paper apart, and show the impression of either side of the wing upon either side of the paper.

If these directions have been properly carried out, the membrane should now appear entirely divested of scales, and looking like a fly's wing. It will probably adhere in some parts closely to the impression, though sometimes the perfect membrane falls away as the paper is opened. When this is not the case a good

portion of it may be blown away at once, and the remainder may be easily lifted off with a sharp-pointed penknife when the gum is quite dry. The cutting out of the wings must also be left until the paper is perfectly dry, for if cut whilst damp, the edges would lose their sharpness of outline.

Next month we will give further directions for making a collection of printed butterflies' wings, and tell the collector how to procure perfect specimens.

CARPET GARDENING.

THE employment of flowering plants or hardy shrubs with colored leaves to produce decorative designs constitutes what is called carpet gardening. Some very striking and attractive effects may be obtained in this way, though great pains and nicety are requisite, and patience and perseverance are as necessary as in most other things. We give herewith some simple designs for circular beds five feet in diameter and for oval ones ten feet long. The entire surface is to be covered, and such flowers are to be chosen as will produce pleasing contrasts of color. A great variety of designs may be invented or selected, and of course the beds may be of any shape or size desired.

Having decided upon the exact size and shape of the bed you intend to plant, procure some stout brown paper, and prepare a piece of corresponding size and shape. The paper sold for putting under carpets will be most convenient, as you can get any length you like, and increase the width when necessary by pasting pieces together. Fold the paper in half, and trace half the pattern, using a carpenter's pencil; lay the paper upon a board, and with a punch make holes along the lines of your pattern, right through the folded paper. You thus get the pattern complete with less trouble than tracing the whole of it, and with more exactitude. Take care that the holes are fully as large as the top of a thimble. Write upon the paper the names of the plants you are going to use, in the places you intend them to occupy. All these preparations can be made indoors, and will furnish pleasant amusement for wet days in the country.

Have the bed properly prepared, and the surface made perfectly level; lay your pattern upon it, and strew it thickly with sand (white sand is best, but common yellow sand will do). Now lift up the paper carefully, and you will find your pattern clearly traced upon the surface of the bed, the sand having dropped through the holes and defined it. Begin to plant at the middle of the bed, and if you have to dig a large hole for a centre, be careful to put away the earth out of it, as if you merely put it on one side you run the risk of spoiling your pattern. Take care also that your dress does not move the sand about, or you will soon be in hopeless confusion. Of course the number of plants required varies according to their size, and it is impossible to give any exact idea on the subject. Of the smallest plants employed, it is calculated that a thousand would plant a bed seven feet long by three wide. The small hardy shrubs used for carpet gardening should not be suffered to exceed six inches in height, and if they grow beyond that, they must be reduced to their proper level by having their heads nipped off. This does the plants no harm, and improves the surface of the carpet by making them spread out.

ONE important object in fern-collecting should always be kept in mind. Before removing a plant from its home, the soil in which it is growing, its position as to shade or shelter, and the manner in which it has fastened itself to sloping bank, to tree fork, or to rifted rock, should be carefully noted; and the cultivator should then endeavor as nearly as possible to provide similar conditions of growth under cultivation.